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Urie Bronfenbrenner: Bioecological Human Development Model

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Abstract

Urie Bronfenbrenner's Bioecological Human Development Model emerged and transformed throughout his six decades of rigorous scientific research and prolific writing. The Bioecological Human Development Model is a multidisciplinary, integrated, systems approach to understanding human growth. This paper will explain and explore this model. Human beings can create the environments in which growth takes place as the individual interacts with others within (microsystem) and between reciprocating systems (mesosystem). The exosystem is the extended system in which the individual does not participate but still is influenced by the proximal process of human development. The macrosystem is the overarching system that includes large institutions, government, societal and cultural influences which impact the development of the individual. Genetics (genotype) influence and inform the process of growth human but do not determine the whole outcome (phenotype). Finally, the chronosystem is human development over time or the influence of time on development.

Urie Bronfenbrenner: Life and Work

Very few human beings have influenced or changed the way people think globally. Urie Bronfenbrenner was one man who boldly and humbly changed the way we think about children, human development across the life span, and how effective social science research can impact governmental policy. The purpose of this paper is to sketch the life and work on one of Russia's sons and America's great thinkers. In this paper I will discuss how Urie Bronfenbrenner sought to develop rigorous and relevant scientific research methodologies, conduct a brief review of his literature to describe The Ecology of Human Development theory which evolved into the Bioecological Human Development Model. Finally, I will review two research articles that apply Bronfenbrenner's ecological theory.

To understand the essence of Bronfenbrenner's impact on psychology and national policy one needs to answer "Who was Urie Bronfenbrenner?" He was born in Russia in 1917 and immigrated to the United States when he was six years old (Ceci, 2006). His academic and professional career was unique and diverse. After graduating high school in Haverstraw, New York he received his bachelor's degree from Cornell in 1938, a masters from Harvard in 1940, and a doctorate from the University of Michigan in 1942 (Ceci, 2006, p. 173). Education became one of his passions. Immediately after graduation he served in the U.S. Army as a psychologist and after being demobilized he worked in Washington, DC "as the assistant chief clinical psychologist for research in the new VA Clinical Psychology Training Program" (p. 173).

In 1948 he began what would be his life work at Cornell where he reached the status of professor emeritus until he died at age 88. Stephen Ceci (2006) was one of Bronfenbrenner's colleagues and closest friends who said that his academic work focused on three main objectives:

a) rigorous research and development of human ecological theory; b) demonstrating through scholarship how this theory can be applied to policy, and b) communicating through prolific writing his research so it can be applied to the social sciences in order that lives could be changed. In his career he wrote over 300 scholarly articles and chapters, 14 books and virtually created the integrated field of the ecology of human development (Brendtro, 2006, p. 162).

Bronfenbrenner's Early Research and Literature

Bronfenbrenner (1947) in one of his first articles began with the supposition that the emerging field of mental health was unstructured and needed to be organized. Bronfenbrenner (1947) proposed a new research methodology to be used at the Veterans Administration (VA). He concluded that rigorous research methods need be of the highest importance if new “techniques” for treating mental health problems are to be achieved. In this article he elucidated about the nature of the clinical psychologist's role in research. In one fascinating sentence he stated “With due regard for the important contribution of objective psychological methods, the fact remains that diagnostic techniques in psychology—and even more notably in psychiatry—are still based in large measure on experience rather than experiment” (p. 34). Bronfenbrenner went on to lay out a rigorous research plan of “broad scope” (p. 38). One can deduce from this article that Bronfenbrenner knew that if psychology and psychiatry were to succeed in helping people then critical, analytical, and rigorous scientific research was the means to the end.

Much of Bronfenbrenner's early research was in personality theory and diagnostics of personality disorders. Bronfenbrenner (1953) espoused the concept of “interacting relationships” (p. 157) as one the hallmarks of his ecological human development model. He referred to his own research as an integrated personality theory. All throughout this article he discussed personality as “interactive” or “interacting” with one's surroundings to include people.

Bronfenbrenner believed personality theory needed to move away from the subjective anomalies of abnormal psychology and focus on objective research of the everyday person living in the individual's everyday environment (p. 157). Also, in this article he introduced another concept that would be at the heart of his work—the idea of a “system.” He stated “a conception of personality as a system of relatively enduring dispositions to experience, discriminate, or manipulate actual or perceived aspects of the individual's environment (including himself)” (p. 158). He discussed in great detail personality interacting with “sub-systems” (p. 164). Finally, this article revealed his life-long interest in cross national research.

Bronfenbrenner's cross national research studies are expansive. There are not many people who can understand their own culture let alone walk across the bridge of knowledge to another culture to conduct social science research. In the early 1960's Bronfenbrenner (1962) returned home to Russia to examine Soviet morality and youth character education. This study on character development was rooted in his early love of personality theory and love of Russia. In this study he compared and contrasted character development in Russia and the United States through the exploration of the work of A. S. Makarenko who Bronfenbrenner said was like the Dr. Spock of Russia (Bronfenbrenner, 1962, p. S45). One can see all throughout this research article how Bronfenbrenner's thoughts dig deep into the sociological factors that impact education, human relations, and growth which will again emerge as one of his most celebrated accomplishments in life as the co-founder of the Head Start program in the U.S. The study of Makarenko's work will reemerge in Bronfenbrenner and Evans (2000) when he again notes the significance of Makarenko's research with disadvantaged Russian youth.

Understanding the socialization processes involved in human development became one of Bronfenbrenner's primary focuses. In two cross national studies in 1962 and 1974 he examined

patterns in child development in The Federal Republic of Germany (Devereux, Bronfenbrenner, & Suci, 1962) and Israel (Devereux et al., 1974). These studies are very interesting just from the historical view point of Bronfenbrenner being an immigrant from Russia who served in the U.S. military during WWII when Germany was the enemy against the Jews, not to mention the Russians, and the United States and when over 500,000 Americans, 6,000,000 Jews and 12,000,000 Russians died. One can only wonder if one by-product of this cross-national research was national reconciliation?

The German study (Devereux, Bronfenbrenner, & Suci, 1962) examined parental behavior and child rearing. As a researcher Bronfenbrenner sought precision in every study and recognized in cross national studies there would be methodological problems. Bringing together complex ideas and making generalizations was a skill he developed. He could take a vast amount of information and make propositional truths such as his “Five Critical Processes for Positive Development” (Bronfenbrenner, 1990). Urie Bronfenbrenner’s work was prophetic and as one former student Laurence Steinberg, who himself became an acclaimed scholar, once stated that Bronfenbrenner was called to do “God’s work” (Brendtro, 2006, p. 162).

Bronfenbrenner took great risk in his research which is most evident in his 1967 article on quality and equality in education. One needs to be mindful that when this article was written it was at the height of social unrest in the United States, the Vietnam War was bearing down on the American psyche, and school integration was a very sensitive issue. Furthermore, Lyndon Johnson and Congress started the “War on Poverty” in 1964, the Head Start program was announced in 1965, and funding was appropriated in 1966 for the program, and the 1968 presidential elections campaigns were starting. With this as a backdrop Bronfenbrenner (1967) launched into a study that would change education in the U.S. He did not dilute his research

assumptions in this article when he stated that if quality and equality was going to be a reality in the classrooms across America there had to be radical change in how people understood children and specifically the “negro” child with their own unique characteristics, cultural heritage, and social problems. One can see in this article the ecological human development model emerging even though he does not specifically state it in those terms. His research conclusions in this article are riveting. Bronfenbrenner (1967) concluded if we do not get this right the economic and psychological cost would be enormous.

The Bioecological Human Development Model

Where do you begin when trying to define and describe a systems theory that has changed the way people think and practice the science and discipline of psychology? Also, how does one summarize six decades of theoretical and scientific research? Urie Bronfenbrenner’s Bioecological model is not as complex as one may think and today it may seem like common knowledge and self-evident. Bronfenbrenner (1974) in an insightful article on developmental research with children and public policy introduced his ecological theory. The impetus of this article began with a series of questions he was asked by policy makers in Congress and student researchers back at Cornell. During a question and answer session and for one of the first times in his life when he was asked to show them the evidence of his ideas he said “I had nothing to say” (p. 1). This “rare” experience as he called it did not last long for in 1977 he laid out the framework of the “Experimental Ecology of Human Development” that eventually became his groundbreaking Bronfenbrenner (1979) book “The Ecology of Human Development.” Later he refined these ideas in his final edited book, Bronfenbrenner (2005) “Making Human Beings Human: Bioecological Perspective on Human Development.”

Even though the Ecological Human Development theory evolved into the Bioecological Model the essence of the theory remained the same. Bronfenbrenner (1977) scientifically explained four definitions and nine explicit propositions to describe the “Experimental Ecology of Human Development.” I will paraphrase and capture the essence of each definition. The first definition is a working definition of “ecology of human development” (p. 514). The essence of this definition is captured in several key words: scientific study, life span, growing human, changing environment, and processes. Bronfenbrenner (1977) viewed the human being as dynamic, in that the human relates in a reciprocating manner with one’s environment in formal and informal relationships which influence change across the life span.

The essence of second definition is captured in one word “nested” but is explained in five critical terms describing the hierarchical (proximal) structure of his theory: microsystem, mesosystem, exosystem, macrosystem then the term chronosystem which he added later. Nested comes from the Russian doll analogy of a set of dolls within a larger doll. The microsystem (the inner smallest nested doll) has to do with the individual human’s immediate interacting environment and reciprocating relationship with family, friends, daycare, school, and other local entities e.g. church. One of the unique terms Bronfenbrenner (1977) employed is “activity” as compared to “behavior.” He uses human activity to describe the various human interactions a person has in his or her environment.

Next, the mesosystem are the interrelations between settings an individual finds themselves in. These are interacting systems. One microsystem interacting with another microsystem makes up the mesosystem e.g. how an individual and the family interact with school or work or how an individual child interacts with a peer group is a mesosystem. The key is that the individual in one setting interacts as an individual in another setting. The exosystem

“is an extension of the mesosystem embracing other specific social structures” but do not involve the actual individual interacting with this level of the hierarchy of social structures (p. 515).

These structures are the large institutions e.g. would be a huge hospital. A parent brings a child to see a doctor in a hospital. The child does not interact with the hospital as a whole institution yet the whole mesosystem of the hospital does impact the care of the child. The largest nested level or final level in the structure is the macrosystem which includes such things as national policies, government, and culture. These are the overarching institutions that influence the various levels of the system or structure. The individual lives in the two immediate lowest levels but the interactions at all levels influence the growth of the individual human across the lifespan. The final dimension or system is the chronosystem which is the influence of time on human development.

The third definition can be captured by the phrase “ecological validity.” Which refers to the ability to measure the environmental influences that the individual experiences. The key to understanding ecological validity is the environment has objective properties that can be researched and measured. One of the unique research methods Bronfenbrenner espoused was to measure environmental factors not in a laboratory but in the natural settings of the individual. For example to measure child-parent interactions one can best see authentic human activities in the family’s home. Laboratories are staged and artificial. Homes, schools, and neighborhoods are more natural.

The fourth definition is captured in the one word “experiment.” As noted above Bronfenbrenner desired to measure environmental factors in the individual’s natural setting e.g. class room or living room. He believed that in doing an ecological experiment “observation” was not enough (p. 517). Bronfenbrenner (1977) recalled a statement from one of his early

mentor's who told him "Bronfenbrenner, if you want to understand something, try to change it" (p. 517). To this end he espoused the following experimental dictum: "If you wish to understand the relation between the developing person and some aspect of his or her environment, try to budge the one, and see what happens to the other" (p. 518). He practiced a method of scientific discovery and believed "in ecological research, the principal of main effects are likely to be interactions" (p. 518). He sought to measure the effects of system interactions whether it was child-parent attachment patterns or child-teacher discipline patterns or what influence public programs and national policy such as Head Start had on a child's education and human development.

From here Bronfenbrenner laid out nine propositions to build his ecological theory. In these propositions he explicates the functional meanings and applications of the four main definitions. Bronfenbrenner (1977) in excruciating detail and using current research explained the multidimensional interactive relationships between each system and empirically demonstrated the meanings of reciprocity in human interactions, functional social systems, the impact of physical factors upon individuals and systems, ecological transitions between each system, and how to conduct system experiments.

As mentioned earlier Bronfenbrenner's theory was a life time of work which evolved over his life time. Bronfenbrenner, Kessel, Kessen, and White (1986) critically analyzed the state of affairs of human development theory. This interesting article is a series of professional conversations between these eminent scholars. They agree to disagree on the past, present and future of developmental psychology. Bronfenbrenner is the optimist in these dialogues. They all seem to agree that in the emerging post-positivist era they needed to take inventory of the current theory and decide the way ahead in research and development. One of the critical arguments

they discussed was the perceived fragmentation of developmental psychology into research niches and recurring faddism. Bronfenbrenner said this was a natural phenomenon in developmental psychology and should not be considered bad science. The key was being able to integrate the various research studies to contribute to the over arching theory of developmental psychology. They all agreed that a history of developmental psychology needed to be undertaken.

Along the lines of history, Bronfenbrenner and Ceci (1994) reconsider the historical nature versus nurture question and biological factors of human development. How much of human development is rooted in biology or genetics? How much does the environment influence human development? To answer these questions they explored the impact of heritability and environment on human growth and development. They knew genetics impacted development but how could they determine how much variation does biological factors have on individual growth, how could this be measured, and how can it be generalized?

They utilized formulaic research methods from twin studies to determine the proportionality of biological versus environmental factors on human development. They concluded in this study “underlying the Bioecological model is a cardinal theoretical principle emerging from research on theories of genetic transmission, namely, that genetic material does not produce finished traits but rather interacts with environmental experience in determining developmental outcomes” (p. 571). They went on to explain three new propositions to the Bioecological theory; to test these propositions through three hypotheses. The outcome of these studies led to the development of “proximal processes” concept which in effect is “the primary engines of effective development” (p. 572). They concluded that engines do not work effectively without fuel. Genetics is the fuel and the proximal processes are the levels of the ecological

(systems) environment. The Bioecological model starts with parental genotypes which produces parental phenotypes then as a child interacts with the levels of proximal processes (micro, meso, exo and macro-systems) over time (chronosystem) they will development (child's genotype to phenotype). Environment plays a critical rule in a child's development.

Bronfenbrenner and Evans (2000) reviewed the scientific literature and development of the Bioecological model from 1994 to 2000. They refined the definition of proximal process as the "engines of development" (p. 118). They compared two types of developmental outcomes one of competence and the other of dysfunction. Competence is the level of "knowledge, skill, and ability" a person learns over time as they interact within the proximal levels of environment. Dysfunction is the individual's inability or difficulty of interacting with the developmental trajectory of human growth. They discussed the types of research necessary to measure competence and dysfunction. Bronfenbrenner and Evans (2000) would lead to a capstone work and the fullest development of Bronfenbrenner's theory found Bronfenbrenner (2005) and is discussed in the conclusion.

Applications of the Bioecological Model

Grzywacz (2000) utilized the ecological theory to demonstrate its' application to "treatment and prevention of poor health" (p. 101). This study emphasized the biopsychosocial model of health and integrated the ecological model to develop leverages and linkages to improve health outcomes. He began by listing six principles from the ecological model that can be incorporated into understanding health related practices in medicine. The first principle he focused on is the flexibility of the Bioecological model's ability to integrate factors from various disciplines and that they can be reciprocally related. Second, he noted how the interaction between individuals and their community is critical for understanding a person's health. Third,

he concluded health is an outcome of a person's interaction with their environment. Fourth, there can be disproportionate amounts of environmental factors that cause poor health. Fifth, "physical and social environments are interdependent" (p. 102). Lastly, to understand individual health requires multidisciplinary approaches to health prevention and intervention (p. 102).

After an overview of the Bioecological theory he concentrated on several environmental factors which impact poor health outcomes to include: socioeconomic status, the family, employment, and school. Grzywacz (2000) demonstrated the interactions within these settings impact individual health. From here he discussed the implications for practitioners." Medical practitioners can use the Bioecological model to develop "targeted" populations for health prevention and intervention strategies. For example, if parents are prevented from taking children to the doctor during their work hour's doctors could extend their work day in order to provide time for families to pick up children from home, daycare or schools and go to the doctor without missing work. He concluded that the multidimensional characteristics of the Bioecological model make it ideal for medical doctors to understand their patients better in order to help develop positive health outcomes.

Stacks (2005) employed the ecological model in classic form by dealing with externalizing behavior problems when children enter school. She concluded that most externalized behavioral problems are normative in preschool children and the school setting can help correct many of these behaviors through a "successful transition" into kindergarten (p. 269). She began with two sets of behavioral problems: external and internal. Externalized behavior is typically manifested in aggression. Internalized behavior is typically manifested in anxiety.

Stacks (2005) conducted a thorough review of the literature on the externalized behavior of children prior to entering kindergarten. She noted that many daycares and kindergarten

classrooms are a “safe haven” for many children who live in environments that foster aggressive behavior. Many aggressive behaviors can be effectively managed and corrected in daycare or school; however, she noted that if a child is maladaptive they need to be referred to behavioral health specialists. The ecological model can help teachers and daycare workers develop strategies to help children cope with the transition to school and to help correct externalizing behaviors while in school. In her research Stacks (2005) analyzed externalized behavior in great detail at the microsystem level by examining the impact of home environment, school environment, parental attitudes and behaviors, attachment theory, the problem of divorce, and psychopathology. Then she briefly discussed the mesosystem, exosystem, and macrosystem factors and did not mention the chronosystem. Stacks (2005) concluded her article with implications for practice on how and where to refer a child when behavior problems can not be corrected in the classroom.

Conclusion

In Bronfenbrenner’s (2005) culminating work he made a stirring conclusion to his 60 years of scientific research. He stated “to a greater extent than for any other species, human beings create the environments that shape the course of human development” (p. xxvii). By this Urie Bronfenbrenner concluded that environmental factors are created by humans such as a healthy home or school environment can foster healthy human growth. Researchers need to be able to understand the various environments that foster healthy growth. To this end psychologists should strive to develop Bioecological research methods and studies that help others develop in healthy environments. They should develop health prevention programs, intervention strategies and policies to help human beings become human beings so they can flourish and live out their human potential in safe and stimulating environments.

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Key Words: bioecological theory, ecological theory, human development, PPCT model, Urie Bronfenbrenner. the time it was rst proposed in the 1970s until Bronfenbrenner's death in 2005. It is therefore unfortunate that too many scholars treat the theory as though it deals solely with the influence of context on children's or adolescents' development and take no account of what came to be the central aspect of the theory, namely proximal processes, and how person characteristics, context, and historical time mutually influence those processes (see Tudge, Mokrova). Finally, emphasizing the role of person characteristics in his new bioecological model, Bronfenbrenner highlighted the fact that they appear twice in this new conceptualization of human development. Bronfenbrenner's bioecological model is a theory of educational psychology that studies human development over time. Urie Bronfenbrenner was a. Also Check Out. Please share or cite this article as: Madeline, "Bronfenbrenner's Bioecological Model of Development (Bronfenbrenner)," in Learning Theories, May 15, 2017, <https://www.learning-theories.com/bronfenbrenners-bioecological-model-bronfenbrenner.html>. Share : Facebook.